

ABSTRACT OF THE DISCLOSURE

The present invention discloses a magnetoresistive random access memory (MRAM) and a manufacturing method thereof. The whole cells are connected to each other by using a substrate as a ground terminal and a vertical structure field effect transistor (FET) for connecting the cells to the bit line. Thus, the MRAM is easily manufactured without requiring a special process for isolation of each cell. The MRAM uses the vertical structure FET to simplify the whole manufacturing process. An MTJ cell mask process which is essential in a general horizontal structure FET is omitted, to improve a speed of the MRAM and attain high integration of the MRAM.

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